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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,397	11/19/2003	Adolf Stender	03100186AA	5309

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EXAMINER	
MAYO, TARA L	

ART UNIT	PAPER NUMBER
3671	

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/715,397	STENDER ET AL.	
	Examiner	Art Unit	
	Tara L. Mayo	3671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9-17* is/are rejected.

7)☒ Claim(s) *8 and 18-24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20031119*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "spacer knit which consists of two textile surfaces connected to each other by spacer threads" recited in claim 5 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant

will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because it includes an implied phrase. On line 1, delete "This invention relates to a" and insert therefor --A--. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1 through 3, 6, 7, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsler et al. (U.S. Patent No. 5,845,352 A) in view of Christensen et al. (U.S. Patent No. 6,745,499 B2) and Crosbie (U.S. Patent No. 6,336,681 B1).

Matsler et al. '352, as seen in Figures 1 through 3, show:

with regard to claim 1,

a shaped body (10), in particular for a seat cushion, having a lower supporting layer (12) which forms a lower covering surface and, on its upper side, has integral supports which are spaced apart from one another via expansion channels and on which a polyurethane foam layer (11; col. 3, lines 24 through 28) rests, the upper side of which layer is covered by an upper covering (13);

with regard to claim 2,

wherein the integral supports are at a narrower distance from one another in the region of the pressure peaks which occur under load;

with regard to claim 3,

wherein the integral supports are of columnar shape;

with regard to claim 6,

wherein the polyurethane foam layer partially laterally encloses the lower supporting layer; and

with regard to claim 7,

wherein the gel layer is bonded to the polyurethane foam layer (via element 55).

Matsler et al. '352 disclose all of the features of the claimed invention with the exception(s) of:

with regard to claim 1,

the lower supporting layer consisting of polyurethane gel;

with regard to claim 11,

the chemical structure of the polyurethane gel consisting of long polymer threads and only a few linkages without added plasticizers being used;

with regard to claim 12,

the polyurethane gel comprising under-cross-linked polyurethane based on polyols and polyisocyanates or polyethers and polyisocyanates.

Christensen et al. '499, as seen in Figure 4, show a shoe sole comprising a resilient insert (400) having cushioning chambers (402, 404) filled with a fluid for absorbing impact forces and expressly teach the functional equivalence of air and gel as suitable fluids (col. 12, lines 23 through 31). Christensen et al. '499 fail to teach the gel as being a polyurethane gel.

Crosbie '681, as seen in Figures 2 through 3d, shows a seat cushion comprising a top layer (41) including a layer of polyurethane gel (col. 4, lines 42 through 50; col. 8, lines 27 through 33). Crosbie '681 is silent with regard to the chemical make-up of the polyurethane gel.

With regard to claim 1, it would have been obvious to one having ordinary skill in the art of cushions at the time the invention was made to modify the device shown by Matsler et al. '352 with the substitution of polyurethane gel for the air in the lower supporting layer as taught by Christensen et al. '499 and Crosbie '681 to be art recognized equivalents.

With regard to claim 7, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, the claimed limitation of a film being produced together with the gel layer and pulled off has not been given patentable weight.

With regard to claim 11, it would have been obvious to one having ordinary skill in the art of synthetic resins at the time the invention was made to make the polyurethane gel disclosed by the combination of Matsler et al. '352, Christensen et al. '499 and Crosbie '681 of the long chain type having few linkages without added plasticizers. The motivation would have been to produce a gel substance with high flexibility at room temperature (very low hardness).

With regard to claim 12, it would have been obvious to one having ordinary skill in the art of synthetic resins at the time the invention was made to make the polyurethane gel disclosed by the combination of Matsler et al. '352, Christensen et al. '499 and Crosbie '681 of the under-cross-linked type based on polyols and polyisocyanates or polyethers and polyisocyanates. The motivation would have been to produce a soft to tacky gel substance with high flexibility at room temperature (very low hardness).

8. Claims 4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsler et al. (U.S. Patent No. 5,845,352 A) in view of Christensen et al. (U.S. Patent No. 6,745,499 B2) and Crosbie (U.S. Patent No. 6,336,681 B1) as applied to claim 1 above, and further in view of Purdy et al. (U.S. Patent No. 5,680,662 A).

Matsler et al. '352 in view of Christensen et al. '499 and Crosbie '681 disclose all of the features of the claimed invention with the exception(s) of:

with regard to claim 4,

the polyurethane foam having on its lower side integral projections which enter into the expansion channels of the gel layer;

with regard to claim 9,

the integral projections extending as far as the bottom of the expansion channels; and

with regard to claim 10,

the projections being supported on the bottom of the expansion channels.

Purdy et al. '662, as seen in Figure 4, show a mattress (10) comprising a series of alternating gel-filled lower tunnels (32) and upper loops (34) to prevent "bottoming out" (col. 1, lines 34 through 44) and to better normalize and distribute the weight of the patient's body and to substantially reduce the tangential forces bearing on the skin of the user (col. 3, lines 60 through 67), wherein the integral projections of the upper layer extend as far as the bottom of the expansion channels formed between the tunnels of the lower layer, and wherein the projections of the upper layer are supported on the bottom of the expansion channels.

With regard to claims 4, 9 and 10, it would have been obvious to one having ordinary skill in the art of cushions at the time of invention to modify the device shown by the combination of Matsler et al. '352 in view of Christensen et al. '499 and Crosbie '681 such that the polyurethane foam would have integral projections on its lower side to enter the

expansion channels of the lower supporting layer as taught by Purdy et al. '662. The motivation would have been to better normalize and distribute the weight of a user throughout the device.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsler et al. (U.S. Patent No. 5,845,352 A) in view of Christensen et al. (U.S. Patent No. 6,745,499 B2) and Crosbie (U.S. Patent No. 6,336,681 B1) as applied to claim 1 above, and further in view of Himmelsbach et al. (U.S. Patent No. 6,630,227 B1).

Matsler et al. '352 in view of Christensen et al. '499 and Crosbie '681 disclose all of the features of the claimed invention with the exception(s) of:
with regard to claim 5,

the upper covering being a spacer knit consisting of two textile surfaces connected to each other spacer threads.

Himmelsbach et al. '227 disclose a shaped article and expressly teach the advantageous use of spacer knit fabrics as having high long-term resilience because of the rigid connecting spacer threads (col. 2, lines 59 through 63).

With regard to claim 5, it would have been obvious to one having ordinary skill in the art of cushions at the time the invention was made to modify the device shown by the combination of Matsler et al. '352 in view of Christensen et al. '499 and Crosbie '681 by

substituting spacer knit consisting of two textile surfaces for the first and second layers (14, 15) of the upper covering (13) as taught to be advantageous by Himmelsbach et al. '227. The motivation would have been to impart long-term resilience to the upper covering.

10. Claims 13 through 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsler et al. (U.S. Patent No. 5,845,352 A) in view of Christensen et al. (U.S. Patent No. 6,745,499 B2) and Crosbie (U.S. Patent No. 6,336,681 B1) as applied to claim 12 above, and further in view of Burgdörfer et al. (4,456,642).

Matsler et al. '352 in view of Christensen et al. '499 and Crosbie '681 disclose all of the features of the claimed invention with the exception(s) of:

with regard to claim 13,

the gel compounds being produced from materials having an isocyanate functionality of the polyol component of at least 7.5;

with regard to claim 14,

the polyol component for producing the gel consisting of a mixture of (a) one or more polyols having hydroxyl numbers under 112, and (b) one or more polyols having hydroxyl numbers in the range from 112 to 600, the weight ratio of component (a) to component (b) being between 90:10 and 10:90, the characteristic isocyanate number of the reaction mixture lying in the range of from 15 to 60, and the product from the isocyanate functionality and functionality of the polyol component being at least 6.

with regard to claim 15,

the polyol component for producing the gel consisting of one or more polyols having a molecular weight of between 1000 and 12,000 and an OH number of between 20 and 112, the product of the functionalities of the polyurethane-forming components being at least 5 and the characteristic isocyanate number being between 15 and 60;

with regard to claim 16,

the isocyanides used for ht production of the gels being those of the formula Q (NCO) in which N is 2 to 4 and Q is an aliphatic hydrocarbon radical having 8 to 18 C atoms, a cycloaliphatic hydrocarbon radical having 4 to 15 C atoms, an aromatic hydrocarbon radical having 6 to 15 C atoms or an araliphatic hydrocarbon radical having 8 to 15 C atoms; and with regard to claim 17,

the polyurethane being produced with isocyanates in a pure form or with urethanized, allophanisized, biurethisized or functionally correspondingly modified isocyanates.

Burgdörfer et al. '642 disclose gel compositions for use in cushions (col. 1, lines 6 through 10; col. 2, lines 11 through 29).

With regard to claim 13, see col. 3, lines 55 through 59.

With regard to claim 14, see col. 2, line 63 through col. 3, line 39.

With regard to claim 15, see col. 2, line 63 through col. 3, line 39.

With regard to claim 16, see. col. 7, lines 19 through 33.

With regard to claim 17, col. 11, lines 36 through 44.

With regard to claims 13 through 17, it would have been obvious to one having ordinary skill in the art of synthetic resins at the time the invention was made to make the polyurethane gel composition of the device shown by the combination of Matsler et al. '352 in view of Christensen et al. '499 and Crosbie '681 as taught by Burgdörfer et al. '642. The motivation would have been to produce a gel having long-term stability with variable mechanical properties.

Allowable Subject Matter

11. Claims 18 through 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tara L. Mayo whose telephone number is 703-305-3019. The examiner can normally be reached on Monday through Friday 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will can be reached on 703-308-3870. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TLM
03 September 2004

Thomas B. Will
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Group 3600